As stated before, each of the same samples (a) to (f) used in the tests described hereinbefore was tested by the same testing methods after forming scratches reaching the underlying metallic layer, and the state of corrosion in the scratched portion was observed to obtain the result as shown in Table 1. The sample used in the actual exposure test, however, had no scratch, and the state of corrosion was observed at a cut sectional surface of the sample and compared with the results of other testing methods on a assumption that the corrosion state at the cut cross-section is substantially the same as that shown by scratched portions of the samples.

TABLE 1

Samples	Method of Invention	Actual Exposure	Conventional Method 1	Conventional Method 2
a	white rust	white rust red rust	black rust	heavy white rust
b	white rust red rust	red rust	slight white rust	heavy white rust
c	red rust	white rust red rust	no rust	slight black rust
d	white rut	white rust red rust	white rust	slight white rust
e	slight white rust	white rust red rust	slight white rust	slight white rust
f	white rust red rust	white rust red rust	slight white rust	white rust red rust

The states of corrosion shown in Table 1 are those obtained 432 hours after the start of the test in case of the method of the invention, 30 months after the start of the test in case of the actual exposure test, 1500 hours after the start of the test in case of the conventional method 1 and 450 hours after the start of the test in case of the conventional method 2, respectively.

Table 2 shows the states of the coating layers around the scratched portions of the samples (cut surface in case of actual exposure test) as observed after expiration of the same testing periods as those explained in connection with the test results shown in Table 1.

TABLE 2

Samples	Method of Invention	Actual Exposure	Conventional Method 1	Conventional Method 2
a	end swell	no change	slight end swell	no change
b	end swell	no change	no change	no change
c	no change	no change	end swell	no change
d	end swell	end swell	slight end swell	no change
e	end swell	end swell	no change	no change
f	end swell	end swell	end swell	no change

As will be seen from Table 1, the weather resistance testing method of the present invention can realize, in quite a short time of about 400 hours, a state of corrosion equivalent to that obtained in 30 months of actual exposure. Thus, the method of the invention can promote the degradation also in the aspect of corrosion.

Referring now to Table 2, the weather resistance testing method of the present invention can develop a degradation which is equivalent to or heavier than that obtained in 30 months of the actual exposure, thus proving the possibility of promoting the degradation also in the aspect of the state of the coating layer.

As will be understood from the results of tests described hereinbefore, the weather resistance testing method of the present invention can realize, in quite a short time, a degradation of a degree which very closely approximates that of the degradation caused by a long period of actual exposure, thus proving high degree of correlation between the test results and the natural degradation.

The embodiment described hereinbefore incorporated, as the light source unit, a combination of a metal halide lamp of wavelength ranging between 250 and 550 nm and a filter for restricting the wavelength substantially to a range of 300 to 450 nm, the light source unit illuminating the sample surface at an ultraviolet intensity of 80±5 mW/cm^2. This, however, is only illustrative and the invention can be carried out with different types of light source unit such as an artificial light source including ultraviolet rays of an intensity not lower than several tens of mW/cm^2 together with visible or infrared rays. The advantages of the invention described before can be obtained even when such an alternative light source is used.

What is claimed is:

1. An apparatus for performing a weather resistance test on a composite material having a metallic, inorganic or an organic base member and an organic material covering the base member, comprising:

sample holding means disposed in a sample chamber for holding a sample of said composite material;

irradiating means including an artificial light source for irradiating light substantially in the ultraviolet light area to one surface of said sample;

dipping means for holding the sample in a horizontal position and applying a corrosive ionized aqueous solution selected from the group consisting, of salt, acid and alkali in a liquid state to said sample causing the aqueous solution to stagnate for a predetermined period of time;

dew condensation means including temperature control means disposed in said sample holding means and moistening means disposed in said sample chamber for causing dew condensation on said surface of said sample;

cleaning means for cleaning said surface of said sample;

steaming means including heating means disposed in said sample chamber and said moistening means for steaming said sample in an atmosphere of high temperature and high humidity; and

control means for controlling execution of operations of said irradiating means, said dipping means, said dew condensation means, said cleaning means and said steaming means in a predetermined manner, wherein said control means is adapted to sequentially execute a first step in which the operation of said cleaning means is conducted after the operation of said irradiating means and the operation of said dipping means is conducted after the operation of said cleaning means, a second step in which a second operation of said dipping means is conducted after the operation of said dew condensation means, and a third step in which the operation of said irradiating means is conducted after the operation of said steaming means.

2. An apparatus according to claim **1**, wherein said sample holding means includes a sample holder tray which is pivotally supported at its one end for a pivoting movement between an inclined position for enabling operation of said cleaning means and a horizontal position for enabling operation of said dipping means.

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